REMARKS

A total of 32 claims are now in the present application. The foregoing amendments are presented in response to the Office Action mailed February 22, 2006, wherefore reconsideration of this application is requested.

By way of the above-noted amendments, claim 33 has been amended for consistency with claim 35. New claims 36-49 have been introduced in order to define further features of the present invention which are believed to be patentable.

In preparing the above-noted amendments, careful attention was paid to ensure that no new subject matter has been introduced.

Referring now to the text of the Office Action:

- claims 32 and 34 stand rejected under 35 U.S.C. § 103(a), as being unpatentable over the teaching of United States Patent No. 6,381048 (Chraplyvy et al); and

- claims 7, 8, 10-15, 26-31, 33 and 35 are objected to as being dependent on a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As an initial matter, Applicant appreciates Examiner's indication of allowable subject matter in claims 7, 8, 10-15, 26-31, 33 and 35. The Examiner's rejections of claims 32 and 34 under 35 U.S.C. § 103(a) are believed to be traversed by way of the following discussion.

United States Patent No. 6,381048 (Chraplyvy et al) teaches a Wavelength Division Multiplexed (WDM) transmission system in which Cross-Phase Modulation (CPM) resonances are reduced by mis-matching the amplifier span lengths (and/or dispersion in each span) so an integral number of bit walk-throughs do not occur in successive amplifier spans. The CPM resonances are reduced by adding different lengths of

dispersion-compensating fiber to each span, using different modulation bit rates and/or clock phase delay for each channel, and using different wavelength-selective clock phase delays for each channel. [Abstract] The portions of Chraplyvy et al reference by the Examiner (the paragraphs starting at col 5, line 55 and col. 6, line 64) clearly teach that the wavelength channels are decorrelated by means of a differential delay applied to each channel. Thus:

> "the WDM signal is demultiplexed and each wavelength channel is delayed … This delay is produced by using a different length of fiber for each wavelength. Since each wavelength is delayed by a different amount, the channel modulations are decorrelated when they are recombined in multiplexer 203" (Col 5, lines 60- col. 6 line 1).

Chraplyvy et al also teach the use of a polarization scrambler, and illustrate same in FIG. 4. However, according to Chraplyvy et al, " the use of polarization scrambler and its inclusion in the adjustable, differential time delay 406 were matters of experimental convenience (col. 7, lines17-19)

Based on the foregoing, it will be apparent that the system of Chraplyvy et al decorrelates the wavelength channels by introducing an adjustable differential time delay between the channels. A polarization scrambler may be used as a matter of "experimental convenience", but is clearly not essential.

In direct contrast, claims 32 and 34 respectively define methods and systems in which "each one of a plurality of data signals [are scrambled] using a respective unique scrambling pattern, each scrambling pattern being substantially de-correlated from the other scrambling patterns at any given offset. The scrambled data signals [are then transmitted] through respective channels of the WDM optical signal.

Chraplyvy et al are utterly silent with regard to scrambling patterns of any sort, much less the use of a unique scrambling pattern for each one of a plurality of data signals, and even less scrambling patters that are decorrelated from one another, as required by claims 32 and 34. In that respect, it will be noted that it is impossible to confuse differentially delayed wavelength channels with decorrelated scrambling patterns.

Chraplyvy et al do not mention scrambling each one of a plurality of data signals. Chraplyvy et al teaches polarization scrambling of wavelength channels, but does not teach or suggest scrambling the data signal modulated on the wavelength channel.

Chappry et al does not mention transmitting scrambled data signals through respective channels of the WDM system. Rather, Chappry et al manipulate the wavelength channels themselves, entirely in the optical domain.

Thus it will be seen that Chraplyvy et al do not teach or fairly suggest any of the elements of claims 32 and 34.

A similar situation exists with respect to new claims 36 and 43 and their dependencies. Thus, for example, Chraplyvy et al do not teach or fairly suggest methods or systems which "generat[e] a respective pseudo-random pattern for each of a plurality of optical transmitters at a common transmit site; at each optical transmitter, encoding a respective data signal using the respective pseudo-random pattern, and generating a corresponding encoded optical signal having a respective optical wavelength; and optically multiplexing the encoded optical signals to generate a composite optical signal." As required by claims 36 and 43.

In light of the foregoing, it is respectfully submitted that the presently claimed invention is clearly distinguishable over the teaching of the cited references, taken alone or in any combination. Thus it is believed that the present application is in condition for allowance, and early action in that respect is courteously solicited.

If any extension of time under 37 C.F.R. § 1.136 is required to obtain entry of this response, such extension is hereby respectfully requested. If there are any fees due under 37 C.F.R. §§ 1.16 or 1.17 which are not enclosed herewith, including any fees required for an extension of time under 37 C.F.R. § 1.136, please charge such fees to our Deposit Account No. 19-5113.

Respectfully submitted,
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